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EXAMINER

SMITH, PHILIP ROBERT

ART UNIT PAPER NUMBER

3739

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/807,595

Applicant(s)

LIA ET AL.

Examiner

Philip R. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 15-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/13/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Restrictions

- [01] Applicant elected claims 1-14 without traverse. Claims 15-31 are withdrawn.
- [02] Applicant traverses the election of species requirement, which is withdrawn.

Specification

- [03] The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

- [04] The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- [05] Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

- [05a] Claim 1 recites "removing at least a portion of slack from at least one control cable attached to a servo motor" and "fixing the servo motor where the specified tension is encountered." It is clear to a skilled artisan that this would "increase the viewing head's range of motion." However, it is not

clear how "determining a first servo signal..." and "determining a second servo signal..." would contribute to "increasing the viewing head's range of motion"; nor does the specification disclose such a correlation.

- [05b] Claim 9 recites that "the first and second servo control signal values are used to recalibrate the operation of the remote viewing device to increase the viewing head's range of motion." Claims 10 & 11 further recite that said recalibration includes change a stroke or force applied by the servo motor. Clearly, a stronger servo motor would result in a greater range of motion; however, the specification does not disclose a correlation between "the first and second servo control signal values" and "the viewing head's range of motion," as recited in claim 9.

Claim Rejections - 35 U.S.C. 112, Paragraph Two

- [06] The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- [07] Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
- [08] Claim 1 is rejected for the reasons set forth above.
- [09] Claim 9 is rejected for the reasons set forth above.

Claim Rejections - 35 USC § 102

[10] The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

[11] Claims 1-3 & 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Ikeda (2004/0073083).

[12] With regard to claims 1 & 14: Suzuki discloses a method for improving the operation of a remote viewing device ("electric bending endoscope 2," [0026]), the method comprising:

[12a] removing at least a portion of slack from at least one control cable (comprising "chain 26A" and "bending operation wire 26," [0036]) attached to a servo motor ("motor 32," [0038]), the removing at least a portion of slack including at least changing a distance between the servo motor and a flexible tube termination block ("main frame 4A as a main part of the bending and stretch mechanism portion 4," [0053]) until a specified tension is encountered in the at least one control cable, as taught in [0083]:

The bending and stretch mechanism portion 4 is positioned to the gear box 3 at the position at which the loss becomes minimum upon transmitting the driving force of the motor 32 to the advance and return of the chain 26A and the bending operation wire 26, and the main frame 4A is strongly connected and fixed to the gear box 3.

- [12b] fixing the servo motor where the specified tension ("at which loss becomes minimum," as noted above) is encountered, as taught in [0082]:

After that, the main frame 4A of the bending and stretch mechanism portion 4 is fixed to the gear box 3 by using the connecting and fixing member 8 so that the positioning state is maintained and the bending and stretch mechanism portion 4 is strongly connected to the gear box 3.

- [12c] determining a first servo control signal value (via "encoder 36," [0041]) corresponding to no angular deflection in a viewing head of the remote viewing device; and

- [12d] determining a second servo control signal value (via "encoder 36," [0041]) corresponding to a first angular deflection in the viewing head.

- [13] With regard to claim 2: Suzuki further discloses determining a third servo control signal value (via "encoder 36," [0041]) corresponding to a second angular deflection in the viewing head of the remote viewing device.

- [14] With regard to claim 3: Suzuki further discloses storing the first and second servo control signal values in a memory of a control unit ("control portion 35," [0041]) of the remote viewing device.

- [15] With regard to claim 12: The manual operator of the device disclosed by Suzuki is required during usage to determine and apply an extrapolated servo control signal value for an arbitrary deflection in the viewing head, the determining the

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extrapolated servo control signal value using at least the first and second servo control signal values. For example, the operator, in the course of normal endoscope use, would observe the position of the "bending operation input portion 20" as it instructs a first and second servo control signal and how it correlates with the position of the "bending portion 12" ([0031]). Thus the operator would extrapolate a position of the "bending operation input portion 20" which correlates to an intended position of the "bending operation input portion 20."

- [16] With regard to claim 13: Suzuki further discloses that the at least one control cable is a plurality of control cables ([0036]) and teaches equalizing tensions in the plurality of control cables ("4 is positioned to the gear box 3 at the position at which the loss becomes minimum upon transmitting the driving force of the motor 32 to the advance and return of the chain 26A and the bending operation wire 26," [0083], as noted above):

Claim Rejections - 35 USC § 103

- [17] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- [18] Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Maeda (2004/0054258).

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[19] Suzuki discloses the entirety of claim 1, upon which claims 4 & 7 depend.

[20] Suzuki does not disclose the placing of a recalibration cap over the viewing head in a first position, wherein the recalibration cap in the first position fixes the viewing head in an undeflected position.

[21] Maeda discloses a "positioning means for setting the bending portion 23 to the straight status" ([0059]). At the time of the invention, it would have been obvious to a person of ordinary skill in the art that Suzuki's endoscope be calibrated as instructed by Maeda. Maeda instructs calibration in [0077] as follows:

the calibration instructing portion instructs the calibration operation for outputting the driving signal to the JS motors to the JS-driving signal generating portion so as to perform the calibration operation in which the bending status of the bending portion matches the inclining status of the stick portion in the joystick.

[22] A skilled artisan would be motivated to place Maeda's recalibration cap over the viewing head such that it fixes the viewing head in an undeflected position disclosed by Suzuki in order to precisely match an undeflected position of the bending portion with an undeflected position of the joystick.

[23] With regard to claim 5: The recalibration cap disclosed by Maeda is capable of being placed in such a position that the viewing head may be rotated a first number of degrees until it is in contact with the recalibration cap.

[24] With regard to claim 6: The recalibration cap disclosed by Maeda is capable of being placed in such a position that the viewing head may be rotated a first number of degrees; the viewing head disclosed by Ikeda is intended to view a predetermined target.

Allowable Subject Matter

- [25] Claims 8-12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
- [26] With regard to claim 8: The Prior Art of record does not disclose a second recalibration cap placed over the viewing head, wherein the second recalibration cap allows the viewing head to deflect a first number of degrees; and rotation of the viewing head the first number of degrees until it is in contact with the second recalibration cap.
- [27] With regard to claims 9-11: The Prior Art of record does not disclose first and second servo control signal values used to recalibrate the operation of the remote viewing device to increase the viewing head's range of motion.

Conclusion

- [28] The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Konomura (6793622) discloses a mechanical bending endoscope which reduces slack by repositioning a pulley. Falwell (5944690) discloses a mechanical bending endoscope which reduces slack by slidably repositioning a spring mounted wire terminal. Wood (4941454) discloses a spring biased motor which rotates to bend an endoscope. Kato (6595914) discloses an electric bending endoscope which recognizes a straight position in order to recalibrate.

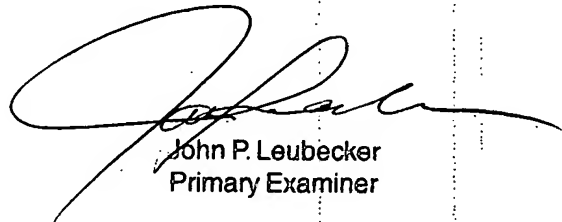
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[29] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip R. Smith whose telephone number is (571) 272 6087 and whose email address is philip.smith@uspto.gov. The examiner can normally be reached between 9:00am and 5:00pm.

[30] If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda Dvorak can be reached on (571) 272 4764.

[31] Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

[32] prs



John P. Leubecker
Primary Examiner